



European Science Foundation - European Space Sciences Committee Address to the ESA Council at Ministerial level

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Representing the European space sciences community, the European Space Sciences Committee (ESSC) strongly supports the scientific programmes proposed by the European Space Agency at the Ministerial Council 2016. In a situation of global economic torpor, the ESSC urges Member State delegations not to overlook or underestimate the unique potential space science has on triggering not only socio-economic benefits and wellbeing for European citizens as well as industrial innovation processes and growth, but also on inspiring interest, enthusiasm and vocations in its citizens. Space science is not a cost, it is a high-return investment with a broad and exciting leverage effect on the people and the economy.

With regard to the ESA DG's proposal Space 4.0, the ESSC offers the following comments:

- **As to the mandatory scientific programme**, the ESSC strongly supports the science objectives that underpin ESA's Cosmic Vision programme. It also recognises the outstanding scientific quality of this programme and its structuring effect on the European scientific community. The ESSC notes that the level of resources requested (increase of 2% on top of constant purchasing power) is essential to ensure the ambition of the science programme. Investments in new technologies are needed to meet the challenges of Cosmic Vision science concepts and pave the way for new fields and new ideas to emerge, further ensuring Europe's competitiveness in science and technology. The scientific community should continue to be a pillar of this programme via frequent consultations.
- **As to the European Exploration Envelope Programme**, the ESSC endorses the new concept of a European Exploration Envelope programme (E3P) for European robotic exploration and human spaceflight in LEO and beyond. The ESSC particularly welcomes the coherent long(er)-term vision of the E3P approach, as it is forward-orientated, integrative, adaptive, and well balanced. The ESSC notes that the level of resources requested in the programme proposal is fully consistent with its ambitions and recommends that the participating Member States subscribe to it. In its execution, the ESSC recommends that the overall programmatic balance, philosophy and diversity be preserved after consulting the stakeholders; it also recommends that budgetary decisions on any of the science-orientated programmatic elements be governed by scientific excellence, based on a transparent and independent (peer) review process.

- **As to the Earth Observation programme**, the ESSC highlights the excellence of the programme and considers that continuity of the Earth Explorer missions should be a priority for EOEP-5 in order to secure the future of European Earth Observation science and engineering. Earth Observation science for society provides vital support to European science and the wider adoption of Earth Observation. The data quality actions and exploitation initiatives are crucial to secure returns on investment and promote the use of Earth Observation data for science and services. The increasing volumes of data generated require the platforms and tools that the Earth Observation Science for Society element will deliver. Member states are encouraged to subscribe to these activities to provide the essential support ESA needs for the coming budget period.
- **As to Space Situational Awareness**, the ESSC recommends that in order to safeguard the European technological systems in space and on the ground, and in order to ensure the highest level of safety for human missions, the European Union and ESA cooperate and participate in the global/international development of a coordinated robust space system of sun-heliosphere monitoring. This would ensure the acquisition of exhaustive real-time data sets and improve space weather understanding and predictions. ESSC also recommends focused research on the physical and chemical properties of Near Earth Objects and Space-Debris Objects in the near-Earth space, increasing our knowledge-based preparedness for mitigating the threats posed by these objects. An increased understanding of the science and resource potential of NEOs as a result of these investigations would be an added benefit.

Finally, for a long time the ESSC has been advocating for improved coordination between ESA and EC; therefore, the Committee notes with satisfaction the *EC-ESA Joint statement on shared vision and goals for the future of Europe in space* signed on October 26, 2016. In this context, the ESSC encourages ESA and EC to also 'look out' to astronomy, planetary sciences and microgravity research, thus complementing the essential Earth Observation activities.